

Trend Study 21-5-98

Study site name: Wood Canyon .

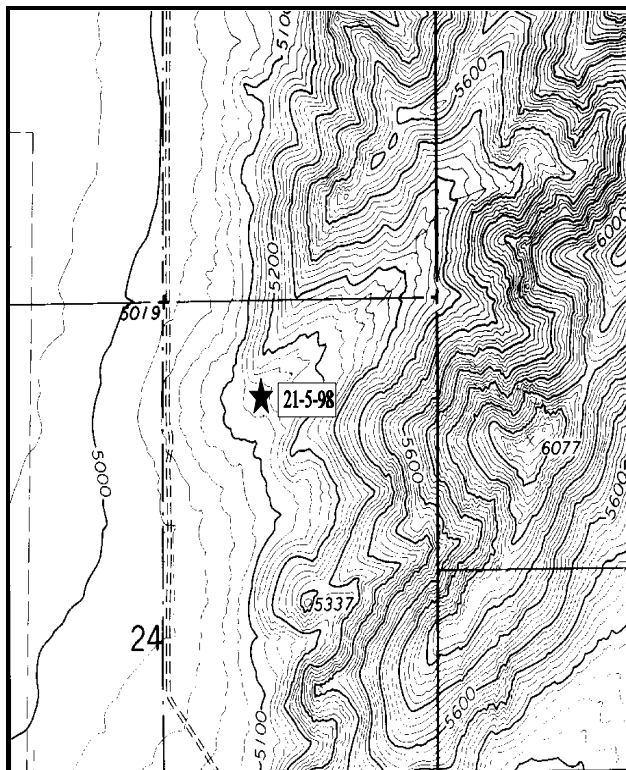
Range type: Big Sagebrush .

Compass bearing: frequency baseline 180 degrees.

Footmark (first frame placement) 5 feet. Frequency belt placement; line 1 (11 & 95ft), line 2 (34 & 71ft), line 3 (59ft).

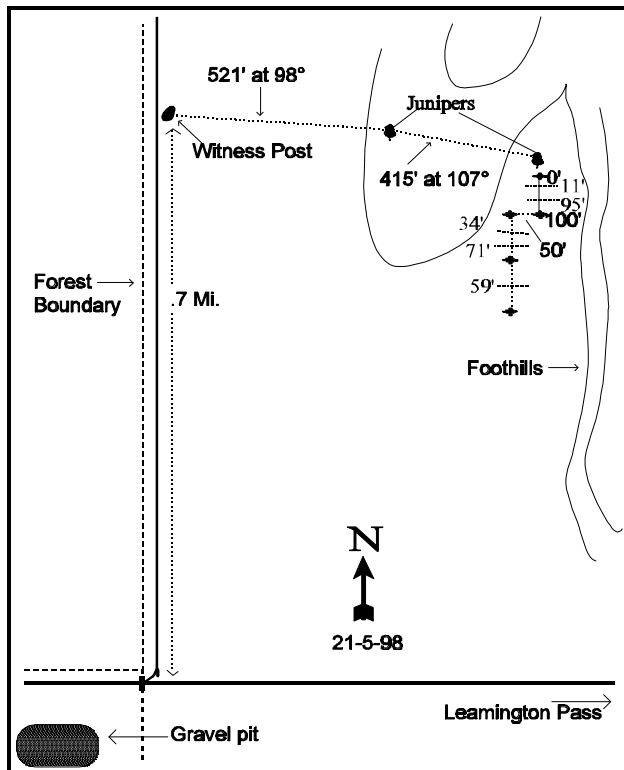
LOCATION DESCRIPTION

From mile marker 19 north of Oak City on SR 125, proceed north 0.4 miles to the Leamington Pass Road. Turn right (east) and go 1.3 miles to the Forest Service boundary. Cross the cattleguard and immediately turn left. Follow the road along the fence for 0.7 miles to a red rebar witness stake 12 feet off the left side of the road (2 feet from the fence) at the top of the rise. From the witness stake, walk approximately 512 feet at 125 degrees M to a mature Juniper. From this tree continue on over a hill at 120 degrees M for 414 feet to another, larger Juniper. The baseline starts 8 feet south of this tree. The 0-foot stake has a red browse tag #7183 attached.



Map Name: Champlin Peak, Utah

Township 15S, Range 4W, Section 24



Diagrammatic Sketch

UTM 4373651.789 N, 393284.062 E

DISCUSSION

Trend Study No. 21-5 (39-5)

The Wood Canyon range trend study is located at the mouth of a small canyon that drains the rather steep Canyon Mountains to the east. The study is on a gentle (5-10%), open southwest slope at an elevation of 5,150 feet. A fire burned through the area sometime after the 1985 reading which eliminated all of the Wyoming big sagebrush, leaving grasses and forbs. The area is no longer useful as winter range for deer and this study should be dropped or moved to a better location. Livestock have grazed this area since the fire, but there is little sign of wildlife use. Pellet group data from 1998 estimate 25 cow use days/acre and less than one deer use day/acre.

The soil is Heist fine sandy loam, a deep well-drained soil of alluvial fans. The parent material is largely conglomerate, limestone and quartzite (unpublished soil survey). The soil at the site is very rocky on the surface and throughout the profile. Effective rooting depth (see methods) is estimated at just over 11 inches. Soil texture is a sandy loam with a neutral pH (7.2). Due to the high rock content on the surface and in the profile, soil temperature is very high averaging 78.6°F at a depth of almost 15 inches. These hot dry soils give a competitive advantage to winter annuals like cheatgrass, tumble mustard, and Russian thistle.

In 1985 the site supported a dense stand of Wyoming big sagebrush. The sagebrush was mostly mature, lightly utilized and in good vigor. Since the fire, the site is now dominated by cheatgrass and weedy forbs. Annual species currently make up 83% of the total vegetative cover. The only browse remaining is a small population of broom snakeweed (1,120 plants/acre).

The herbaceous understory is abundant with grasses and forbs producing nearly 50% total ground cover (48%). However, composition is extremely poor with annual cheatgrass providing 79% of the grass cover. The most numerous perennial grasses present are Sandberg bluegrass and purple three-awn. Forbs were very scarce before the fire, but they have since increased in diversity and nested frequency. The problem is that the composition is dominated by annual weedy increasers. Native grasses are more common on the nearby rocky slopes.

1985 APPARENT TREND ASSESSMENT

The soil trend is currently stable. In the past, this area received a heavy amount of soil and rock deposition due to erosion from the steeper slopes above, but that appears to have stabilized. Erosion from the study site has also been slowed. Grazing seems to have favored the cheatgrass, and there are few perennial herbaceous species left. The age composition of the sagebrush would also indicate a slow downward trend unless reproduction improves.

1991 TREND ASSESSMENT

The amount of basal vegetation cover didn't change as a result of the fire, but it is very low at only 1%. Percent rock and bare ground cover increased substantially, while litter cover went down. These changes all indicate a downward soil trend. The key browse species was Wyoming big sagebrush, which by 1991, does not exist in the immediate area. The fire had to have been very hot for there are no stems or sign that sagebrush was ever here. This area can no longer be considered critical winter range for all browse species have been totally eliminated. There were no pellet groups found on the site. The trend is obviously down. With the inspection of the 1985 and 1991 photo's, it appears that the major species is cheatgrass. Because it is an annual, it was not inventoried. One of the major perennial grass species was Sandberg bluegrass which has decreased considerably in nested frequency. Three-awn has increased slightly. The forbs were almost nonexistent in 1985, yet have increased somewhat. Trend for grasses is down slightly due to decreases in Sandberg bluegrass, while the trend for forbs is slightly up due to increased diversity and nested frequency values.

TREND ASSESSMENT

soil - down

browse - down

herbaceous understory - stable

1998 TREND ASSESSMENT

Trend for soil is up slightly with a decline in percent bare ground, rock, and pavement cover. Erosion is not a problem due to the abundance of protective ground cover. There are no useful browse species on the site and broom snakeweed increased 97% since the last reading. Trend is considered down. The herbaceous understory trend is up. However, composition is poor with cheatgrass and annual forbs accounting for 83% of the herbaceous cover. This site is no longer useful as deer winter range and the study site should be dropped or relocated in the future.

TREND ASSESSMENT

soil - up slightly

browse - down with no useful browse left on site

herbaceous understory - up, but dominated by annuals

HERBACEOUS TRENDS --

Herd unit 21 , Study no: 5

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover % '98
		'85	'91	'98	'85	'91	'98	
G	Agropyron spicatum	1	2	-	1	1	-	-
G	Aristida purpurea	_a 16	_a 20	_b 33	8	10	17	2.83
G	Bromus tectorum (a)	-	-	370	-	-	99	24.87
G	Oryzopsis hymenoides	-	-	7	-	-	3	.09
G	Poa secunda	_a 57	_a 31	_b 105	27	16	38	3.07
G	Sporobolus cryptandrus	3	3	6	2	1	2	.38
G	Stipa comata	1	4	4	1	2	1	.15
Total Annual Grasses		0	0	370	0	0	99	24.87
Total Perennial Grasses		78	60	155	39	30	61	6.53
F	Calochortus nuttallii	1	2	-	1	1	-	-
F	Euphorbia spp.	-	-	2	-	-	2	.04
F	Lactuca serriola	_a -	_b 40	_a 3	-	21	2	.76
F	Phlox longifolia	-	1	-	-	1	-	-
F	Salsola iberica (a)	_a -	_b 7	_c 46	-	5	19	3.00
F	Sisymbrium altissimum (a)	-	-	24	-	-	11	.26
F	Sphaeralcea parvifolia	_a -	_{ab} 4	_b 18	-	3	8	.81
F	Tragopogon dubius	-	-	2	-	-	1	.03
F	Unknown forb-annual	-	-	176	-	-	68	11.29
F	Unknown forb-perennial	3	9	12	1	4	5	.15

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover % '98
		'85	'91	'98	'85	'91	'98	
	Total Annual Forbs	0	7	70	0	5	30	3.26
	Total Perennial Forbs	4	56	213	2	30	86	13.09

Values with different subscript letters are significantly different at $\alpha = 0.10$ (annuals excluded)

BROWSE TRENDS --

Herd unit 21 , Study no: 5

T y p e	Species	Strip Frequency '98	Average Cover % '98
B	Artemisia tridentata wyomingensis	0	-
B	Ephedra nevadensis	0	-
B	Gutierrezia sarothrae	20	1.46
	Total for Browse	20	1.46

BASIC COVER --

Herd unit 21 , Study no: 5

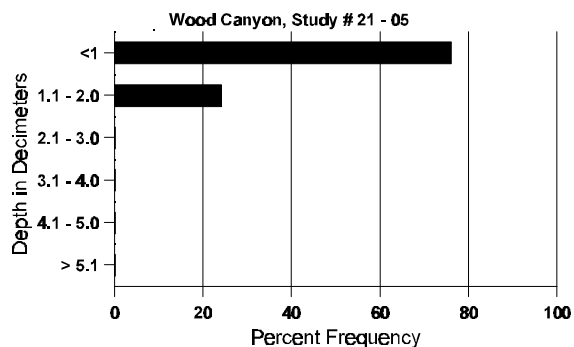
Cover Type	Nested Frequency '98	Average Cover %		
		'85	'91	'98
Vegetation	379	1.00	1.00	46.70
Rock	154	13.00	20.00	12.26
Pavement	182	9.75	8.50	3.49
Litter	389	63.00	54.00	49.37
Cryptogams	86	3.00	0	.97
Bare Ground	241	10.25	16.50	11.80

SOIL ANALYSIS DATA --

Herd Unit 21, Study # 05, Study Name: Wood Canyon

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
11.6	78.6 (14.6)	7.2	60.9	23.8	15.3	2.2	11.6	201.6	.9

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 21 , Study no: 5

Type	Quadrat Frequency '98
Sheep	1
Deer	2
Cattle	6

BROWSE CHARACTERISTICS --

Herd unit 21 , Study no: 5

A Y G R E		Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata wyomingensis																		
Y	85	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	85	30	1	-	-	-	-	-	-	-	31	-	-	-	2066	26	32	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
D	85	21	-	-	-	-	-	-	-	-	16	-	4	1	1400		21	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		02%			00%			09%										
'91		00%			00%			00%										
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	3599	Dec:	39%			
												'91	0		0%			
												'98	0		0%			
Ephedra nevadensis																		
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'91		00%			00%			00%										
'98		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'91	0		-			
												'98	0		-			

A Y G R E		Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Gutierrezia sarothrae																		
S	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	3	-	-	-	-	-	-	-	-	3	-	-	-	100		3	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	1	-	-	-	-	-	-	1	-	-	-	20		1	
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	91	1	-	-	-	-	-	-	-	-	1	-	-	-	33	9	11	
	98	38	15	-	-	-	-	-	-	2	-	-	55	-	1100	11	14	
D	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	91	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	98	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'85			00%			00%			00%			-75%				
		'91			00%			00%			00%			+97%				
		'98			27%			05%			98%							
Total Plants/Acre (excluding Dead & Seedlings)												'85	132	Dec:	50%			
												'91	33		0%			
												'98	1120		0%			